

Practice Concepts

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The Tailored Activity Program to Reduce Behavioral Symptoms in Individuals With Dementia: Feasibility, Acceptability, and Replication Potential

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Purpose: The Tailored Activity Program (TAP) is a home-based occupational therapy intervention shown to reduce behavioral symptoms and caregiver burden in a randomized trial. This article describes TAP, its assessments, acceptability, and replication potential. **Design and Methods:** TAP involves 8 sessions for a period of 4 months. Interventionists identify preserved capabilities, previous roles, habits, and interests of individuals with dementia; develop activities customized to individual profiles; and train families in activity use. Interventionists documented time spent and ease conducting assessments, and observed receptivity of TAP. For each implemented prescribed activity, caregivers reported the amount of time their relative spent in activity and perceived benefits. **Results:** The TAP assessment, a combination of neuropsychological tests, standardized performance-based observations, and clinical interviewing, yielded information on capabilities from which to identify and tailor activities. Assessments

were easy to administer, taking an average of two 1-hr sessions. Of 170 prescribed activities, 81.5% were used, for an average of 4 times for 23 min by families between treatment sessions for a period of months. Caregivers reported high confidence in using activities, being less upset with behavioral symptoms (86%), and enhanced skills (93%) and personal control (95%). Interventionists observed enhanced engagement (100%) and pleasure (98%) in individuals with dementia during sessions. **Implications:** TAP offers families knowledge of their relative's capabilities and easy-to-use activities. The program was well received by caregivers. Prescribed activities appeared to be pleasurable and engaging to individuals with dementia. TAP merits further evaluation to establish efficacy with larger more diverse populations and consideration as a nonpharmacological approach to manage behavioral symptoms.

Key Words: Activity engagement, Occupational therapy, Quality of life, Dementia care, Caregiving

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(Alzheimer's Association, 2008). Behaviors profoundly affect individuals with dementia and their families, compromising their quality of life and safety, heightening caregiver burden and risk for nursing home placement, and increasing health care costs (Ballard, Lowery, Powell, O'Brien, & James, 2000). Even passive behaviors (withdrawal, apathy) are sources of frustration and sadness to families (Colling, 2004).

Behaviors occur across the disease trajectory and dementia types and cannot be attributed to cognitive impairment alone. Emerging conceptual frameworks for understanding behavioral symptoms suggest that behaviors are an outcome of the interaction of individuals and their environments and should be addressed using nonpharmacological approaches. For example, the need-driven dementia-compromised behavior approach views behavior as an expression of an internal or unmet need in the person's environment that can be identified and addressed (Fitzsimmons & Buettner, 2002); the progressively lowered stress threshold views behavior as a response in part to the buildup of environmental stressors that overwhelm the capacity of the individual with dementia (Hall & Buckwalter, 1987); and the Antecedent-Behavior-Consequences approach targets specific triggers prior to and following a behavioral occurrence (Volicer & Hurley, 2003). Finally, the competence-environmental press model (Lawton & Nahemow, 1973) suggests that there are optimal combinations of environmental circumstances or conditions, and personal competencies that result in the highest possible functioning for individuals with compromised cognitive functioning. Obtaining the just-right fit between individual capabilities and external environmental demands results in adaptive positive behaviors; alternately, environments that are too demanding or understimulating result in behavioral symptoms such as agitation or passivity in individuals with dementia.

Developing, testing, and translating nonpharmacological approaches to manage disruptive behavioral symptoms are important public health priorities for advancing better care of individuals with dementia (American Psychiatric Association Work Group, 2007; Cohen-Mansfield, 2001, 2005; Lyketsos et al., 2006; Salzman et al., 2008). The focus on nonpharmacological approaches is warranted in light of recent research showing that pharmacological solutions are not available for some of the most distressful behaviors (e.g., wandering, repetitive questioning, shadowing), have only modest benefits, and can pose considerable

risk. The latter is particularly the case for the off-label use of atypical antipsychotic drugs commonly used for behavioral symptoms, which now have a Food and Drug Administration black box warning of increased mortality risk among older adults with dementia (Ballard et al., 2009; Salzman et al., 2008; Schneider et al., 2006; Selbaek, Kirkevold, & Engedal, 2007; Sink, Holden, & Yaffee, 2005).

Activity Interventions to Manage Behaviors

One promising nonpharmacological approach is the purposeful use of activity. Participation in activities has long been shown to be related to well-being in older adults, although its specific role for individuals with dementia has only recently received attention (Menec, 2003). Research suggests that for individuals with cognitive impairment, activity may fill a void, maintain social roles, enable positive expression, reduce frustrations, and enhance continuity of self-identity and feelings of connectedness (Cohen-Mansfield, Papp, Gill, & Golander, 2006; Kolanowski, Buettner, Costa, & Litaker, 2001; Phinney, Chaudhury, & O'Connor, 2007). Research with nursing home residents has shown that the use of purposeful activity reduces agitation, decreases restraint and pharmacological use, and enhances quality of life for this population (Brooker & Woolley, 2007; Fossey et al., 2006; Kolanowski & Buettner, 2008; Orsulic-Jeras, Judge, & Camp, 2000; Rovner, Steele, Shmueli, & Folstein, 1996). Only a few studies, however, have evaluated the use of activities with community-dwelling individuals with dementia, and fewer still have evaluated a systematic approach for identifying and matching activities to the individual's competencies or included family training (Kolanowski, Litaker, & Buettner, 2005; Marshall & Hutchinson, 2001). One study involving a home recreational therapy intervention with 29 individuals with dementia serving as their own controls found reductions in passivity and agitation (Fitzsimmons & Buettner, 2002). Using clinical trial methodology with 72 dyads, Teri, Logsdon, Uomoto, and McCurry (1997) found two different interventions, caregiver problem solving and use of pleasant events, reduced depressive symptoms in individuals with dementia. In another randomized trial with 153 individuals with dementia, Teri and coworkers (2003) similarly found that exercise plus caregiver training in behavioral management improved physical health and depression in individuals with dementia.

We developed and tested the Tailored Activity Program (TAP), an innovative home-based occupational therapy intervention that identifies interests and capabilities of individuals with dementia, develops and tailors activities to individual profiles, and trains families in using activities as part of their daily care routines. The Tailored Activity Program was tested using a two-group randomized trial with 60 families randomized to intervention or a wait-list control group. As reported elsewhere, we found large and statistically significant reductions in the frequency of behavioral symptoms ($p = .010$, Cohen's $d = .72$) overall for participants who received TAP compared with those in the wait-list control group. We also found improvements for those who received TAP for the most frequently occurring behaviors for this sample, shadowing ($p = .003$, Cohen's $d = 3.10$) and repetitive questioning ($p = .023$, Cohen's $d = 1.22$). We also found large and statistically significant benefits for individuals with dementia including greater engagement in activities ($p = .029$, Cohen's $d = .61$), pleasure ($p = .045$, Cohen's $d = .690$), and an ability to keep busy ($p = .017$, Cohen's $d = .71$) compared with the control group as reported by caregivers. The Tailored Activity Program also significantly benefited family caregivers, reducing their time spent in instrumental care ($p = .005$, Cohen's $d = 1.14$) and daily oversight ($p = .001$, Cohen's $d = 1.01$), and enhancing mastery ($p = .013$, Cohen's $d = .55$) and confidence using activities ($p = .011$, Cohen's $d = .74$; Gitlin et al., 2008).

Although TAP requires additional testing with a larger sample of diverse caregivers, in view of the significant outcomes and large effect sizes found to date, TAP represents a highly promising approach that should be considered as part of the standard of care to manage behavioral symptoms. Thus, the purpose of this article was to describe the intervention, the assessment process by which capabilities and meaningful activities are identified, and the acceptability of the program to individuals with dementia and their caregivers. Given that wait-list control participants also received the TAP intervention following a 4-month retest, the data reported in this article include treatment documentation for all 60 study participants.

Description of TAP

The Tailored Activity Program involves up to eight sessions, six home visits and two brief intermittent telephone calls, delivered by occupational therapists

for a period of 4 months (Table 1). In Phase I of the intervention, occupational therapists use a set of assessments to evaluate caregiver communication and management techniques, identify the preserved capabilities of individuals with dementia, and assess the physical environment; Phase II involves education for caregivers about the role of the environment and activities in dementia care as well as instruction in specific management techniques, and demonstration and practice of selected activities with individuals with dementia and caregivers; in Phase III, therapists continue to provide caregiver training and support in activity use, and help families generalize specific strategies (e.g., communication, task simplification) to other care challenges. Most sessions include both caregivers and individuals with dementia.

Assessments

A combination of standardized and validated neuropsychological tests, occupational therapy-based cognitive functioning observational tools, an interest questionnaire, and an investigator-developed semistructured clinical interview are used. The clinical interview asked caregivers to describe a typical day and their care challenges.

The Dementia Rating Scale (DRS-2), a 36-item standardized assessment, yields quantitative scores in five areas (attention, initiation/perseveration, construction, conceptualization, memory) and normative comparisons (Miller & Pliskin, 2006). Standardized performance-based cognitive assessments, the Large Allen Cognitive Level Screen and the Allen Diagnostic Module Place-mat (Earhart, 2006), used in occupational therapy identify information processing capabilities (attention, ability to follow directions, problem solving, new learning potential, cueing needs) and characterize abilities along a hierarchy of six functional levels (1 = profoundly disabled to 6 = intact executive functioning). Within each level, sublevels (sequential modes of performance) reflecting gradations of abilities are identified. Whereas the DRS identifies and analyzes specific cognitive components as deficit areas (e.g., attention, language, praxis, visuospatial and executive function), these assessments emphasize the functional consequences (both abilities and deficits) of cognitive status.

To identify interests and roles (homemaker, car-penter), caregivers complete the Pleasant Events Schedule with regard to their relative with dementia

Table 1. Overview of the Tailored Activity Program

Session no.	Week no.	Type of contact	Session content
Phase 1: Assessment of caregiver, dementia patient, and environment			
1	1	Home visit	Provide overview of intervention goals Provide basic information and education materials about caregiving, dementia, behaviors Conduct clinical interview (review daily routines, preferences, and interests) Observe caregiver–patient communication and management techniques Begin assessment of dementia patient (Dementia Rating Scale; Allen’s cognitive assessments) Evaluate patient comportment Have caregiver complete Pleasant Event Survey Establish next meeting date
2	2	Home visit	Provide overview of session goals Review education materials with caregiver Brainstorm with caregiver potential activities of interest to dementia patient based on Pleasant Event Survey and clinical interview Continue with Allen cognitive assessments with dementia patient Observe/evaluate areas of home (lighting, safety) in which activity will be conducted Establish next meeting date
Phase 2: Introduction of activity, communication, task breakdown, and environmental simplification techniques			
3	4	Home visit	Provide overview of sessions goals Review assessment results with caregiver Provide 3 written activity prescriptions and ask caregiver–dementia patient (if appropriate) to select first target activity Use role play to show caregiver how to set up target activity Instruct in relevant strategies (communication, cueing, environmental and task simplification techniques) Introduce activity with dementia patient and have caregiver practice set up of target activity Reinforce and validate caregiver techniques and dementia patient participation Provide recommendations as to when to introduce activity and number of times in week Establish next meeting date
4	5–6	Home visit	Provide overview of session goals Review progress in use of targeted activity with caregiver Reinforce use of specific strategies (communication, task simplification, cueing) Problem-solve with caregiver if unable to use activity prescription and modify activity prescription if necessary Identify and introduce next tailored activity with caregiver and dementia patient if appropriate Reinforce and validate caregiver techniques Provide recommendations regarding when to introduce activity and number of times Establish next meeting date
5	7–8	Telecontact or home visit	Review caregiver progress and reinforce strategy use Review and practice communication, environment and task simplification techniques Determine with caregiver what was effective and modify strategies if necessary If relevant, introduce third activity choice Reinforce and validate caregiver techniques Provide recommendations regarding when to introduce activity and number of times Establish next meeting date

Table continued

Table 1 (continued)

Session no.	Week no.	Type of contact	Session content
6	10	Telecontact or home visit	Review progress and reinforce strategy use Review and practice communication, environment and task simplification techniques Determine with caregiver what was effective and modify strategies if necessary Problem-solve with caregiver how to use activities and generalize strategies to other types of activities or newly emerging problems (e.g., behavioral manifestations) Establish next contact date/time
Phase 3: Generalize strategies			
7	10–11	Telecontact or home visit	Review progress with caregiver Reinforce use of strategies Problem-solve with caregiver if unable to continue to use activities Establish next contact date/time
8	11–12	Home visit	Review progress Reinforce use of tailored activities introduced previously Generalize use of strategies (e.g., simplifying the environment) to other care activities Obtain study closure

(Logsdon & Teri, 1997) as the therapist conducts assessments with their relative. Few caregivers have difficulties identifying pleasant events independently, and therapists review the form to assure completeness and clarify questions. Occupational therapists also directly observe comportment of individuals with dementia (Peavy et al., 1996), the physical environment for its barriers and supports of function, and caregiver communication using standardized checklists (Gitlin, Schinfeld, Winter, Corcoran, & Hauck, 2002; Gitlin et al., 2002). Typically, two 90-min home sessions are required to complete all assessments.

Activity Prescription and Caregiver Training

Using the information garnered through the assessments (Phase I), occupational therapists identify up to three potential activities that may be of interest and have meaning to the individual with dementia, and develop a written “activity prescription” for each. The activity prescription specifies the individual’s capabilities, target activity and goal, and techniques for implementation in lay language. Initially, caregivers, and when appropriate, individuals with dementia, choose one of the three activity prescriptions to implement first. The prescription is reviewed and the activity is introduced through role play with caregivers and then direct involvement with individuals with dementia. Caregivers are instructed in five techniques: cueing, relaxing the rules, not rushing, environ-

mental setup, and simplifying communication. They are also instructed in simple stress reduction techniques to establish a calm tone to use prior to initiating and during activities. After an activity is mastered, another is introduced.

Sessions are spaced to allow opportunities for caregivers and individuals with dementia to practice using activities. In subsequent home sessions, activity prescriptions are reviewed and modified if necessary. Occupational therapists continue to practice with dyads, modeling strategies while narrating what is being done and why, and offering feedback as caregivers and individuals with dementia engage in the activity. As caregivers master activity use, therapists facilitate generalizing techniques to other care challenges (e.g., self-care) and provide instruction on how to simplify activities to prepare for future declines (Phase III). Brief intermittent check-in telephone calls encourage use of prescribed activities and provide opportunities to troubleshoot challenges that have been encountered.

Evaluation of Feasibility and Acceptability

To evaluate the feasibility of conducting the assessments, occupational therapists documented test scores, time spent, and ease of administration of each assessment (1 = *very difficult* to 5 = *very easy*).

At the program’s conclusion, occupational therapists rated their perceptions of whether sessions were accepted by caregivers (10 items, 1 = *not at*

all, 2 = *somewhat*, 3 = *very much*; Cronbach's alpha = .76) and individuals with dementia (10 items, Cronbach's alpha = .81), and observed benefits to each (caregiver eight-item index, alpha = .93; individual with dementia four-item index, alpha = .73). Items from a previously validated tool, the Therapeutic Engagement Index (Chee, Gitlin, & Dennis, 2005), were used.

Additionally, for each prescribed activity implemented between treatment sessions, caregivers were asked to estimate time spent in the activity, responsiveness of their relative, the specific techniques they used to introduce activities, and perceived benefits.

Results

Caregivers were primarily women, Caucasian, spouses, and 65 years of age, and had on average a high school degree. Individuals with dementia were primarily men and Caucasian, with a mean age of 79 years.

Summary of Assessments

Table 2 describes the purpose of each assessment, average scores and their range, and average time for and ease of administration. The mean total DRS-2 score (1.54) for individuals with dementia suggests very low overall cognitive functioning (Table 2). However, subscale scores show more variation and hence were more useful clinically for deriving individual profiles of abilities. Similarly, the two Allen assessments suggest a wider range of functioning. These assessments in particular were instrumental in identifying activities that matched specific capabilities. The Allen score suggests detailed information about how individuals are best able to function in day-to-day activities. For example, the average level of 3.6 for the lacing and 3.2 for the placemat tests indicate that individuals in our sample on average had abilities between 0 and 3.6 and limitations described by levels 3.8–6.0 (highest level of functioning possible). Specifically, persons functioning at level 3.6 need verbal cues to help sequence or move through the steps of an activity (such as preparing a simple snack). Although individuals at this level can typically engage in self-care such as their own hygiene, they may need their clothing or hygiene items laid out directly in front of them and assistance washing areas of their body that are hidden from direct view (e.g., back of neck or sides of teeth). Also, this score suggests that individuals are able to respond to verbal cues, will

notice the effect of their actions on objects, and most likely will enjoy simple games such as tossing to a target, coloring large pictures, or making simple crafts. Individuals at this Allen level tend to do well with repetitive, familiar, and routine activities, and respond best to short verbal instructions and when asked to select between a limited number of choices. Furthermore, individuals at this level of functioning may take longer than average to complete activities and will be more successful under the supervision of a caregiver who can help with sequencing in an activity and assuring safety (e.g., medication compliance). Thus, the Allen assessments in particular yield specific knowledge for setting up everyday self-care and discretionary activities to maximize the individual's success and continued engagement. Seven of 60 individuals with dementia (12%) were unable to complete the lacing or placemat tests and were evaluated using sensory-based tools that allowed for assignment of an Allen cognitive function level.

Comportment, a measure of social appropriateness, was relatively high for this group, suggesting that individuals in this sample with moderate to severe memory loss were able to engage in socially appropriate ways, which was an important component in designing activities.

As shown in Table 2, the DRS-2 and the two Allen tests required the greatest amount of time, averaging close to 1.5 hr for completion. Although the Allen provides specificity of capabilities, therapists found the DRS-2 confirmatory of their clinical impressions and further substantiation of cognitive functioning levels. Observation of caregiver communication occurred throughout the testing phase and was reported by therapists as easy to accomplish as these were naturally occurring events. Therapists rated all assessments as relatively easy to use and helpful in informing the selection and tailoring of activities.

Prescribed Activities

For the 60 dyads, 170 activities were prescribed by therapists, representing six major domains (Table 3). Within each domain, activities were tailored to reflect or match specific cognitive abilities. For example, activities designed for individuals with low-level cognitive functioning involve simple repetitive actions or sensory stimulation (viewing a video/DVD, singing familiar songs); by contrast, activities designed for individuals with higher cognitive functioning levels are more goal directed

Table 2. Tailored Activity Program Assessment Battery (N = 60)

Assessment	Purpose	M (SD) score	Actual sample range	Time in minutes for administration, M (SD; range)	Ease of administration, M (SD; 1–5)
Large Allen Cognitive Level Screen (LACLS)	Screen to identify cognitive and motor capacities	3.53 (1.04)	.00–5.20 ^a	17.37 (8.13; 1–45)	4.18 (0.86)
Allen Diagnostic Module (ADM; Placemat ^b)	Evaluation of problem-solving abilities, cueing needs, attention, initiation, and sequencing	3.24 (1.32)	.00–5.00 ^a	32.38 (20.97; 2–100)	3.96 (1.06)
Sensory Motor Stimulation Kit ^c	Used with 7 individuals with sensory-based capabilities unable to perform the LACLS and ADM due to low level of functioning	2.29 (1.11)	.00–3.00 ^a	—	—
Comportment ^d	Evaluation of social engagement and appropriateness	26.43 (6.80)	9.00–34.00 ^e	Ongoing interaction with patient	4.70 (0.70)
Dementia Rating Scale total score ^b (adjusted scores by age/education)	Quantitative assessment of 5 areas, sensitive to mild/moderate dementia	1.54 (1.98)	.00–10.00 ^f	32.38 (20.97; 2–100)	3.96 (1.06)
Attention (8 items)	—	7.10 (4.38)	2–15	—	—
Initiation (11 items)	—	2.46 (1.26)	2–8	—	—
Construction (6 items)	—	6.33 (3.57)	2–10	—	—
Conceptualization (6 items)	—	4.73 (2.98)	2–13	—	—
Memory (5 items)	—	2.19 (0.66)	2–5	—	—
Pleasant Event Schedule	CG completes; used to help identify potential activity choices	Item-by-item reviewed by OT with CG	—	Self-administered (variable from 10 to 20 min)	CGs had no difficulty independently completing
Clinical interview and observation	Investigator developed to identify CG challenges, daily routines, communication, environmental setups	—	—	Variable (about 20 min)	Helps build rapport and engage CG

Notes: CG = caregiver; OT = occupational therapist.

^aTheoretical range = 00–6.00.

^bn = 50.

^cn = 7.

^dn = 51.

^eTheoretical range = 0–34.

^fTheoretical range of subscales = 2–18.

Table 3. Activity Domains and Sample Activities Used in Tailored Activity Program

Activity domain	Examples of activities
Reminiscence and photo activities	Sorting family photos and placing in photo album Looking at old family photographs Singing songs with grandchildren
IADL/household	Cutting coupons out of newspaper Snapping green beans Dusting table with a dusting mitt Wiping silverware
Games and recreation	Tossing colorful beanbags in bucket Matching card game Arranging artificial flowers in a vase Manipulating different textured scarves
Arts and crafts	Assembling plastic plumber's pipe set Making foam coasters Winding yarn
Exercise/physical activity	Balloon toss Doing chair aerobics Taking a walk with companion
Videos and music	Watching a travel video and reminiscing Listening to music of a particular era previously enjoyed Watching birds attend to a bird feeder

Note: IADL = instrumental activities of daily living.

and multisteped (making a salad, sorting three colors of beads).

Of 170 prescribed activities, 81.5% were reported by caregivers to have been used with their relatives on an average of 4.19 ($SD = 4.87$) occasions between each treatment session (1–2 weeks) for an average of 23 min ($SD = 22$) on each occasion. For 54.6% of the activities offered, caregivers reported that their relative engaged independently in the activity. Caregivers reported using the skills learned in intervention sessions including environmental setup (for 75.9% of activities), short verbal instructions (for 68.2% of prescribed activities), verbal encouragement (44.7% of activities), and touch (for 44.1% of activities) with a high level of confidence ($M = 8.96$, $SD = 1.52$ on 10-point scale). Only 18.4% ($n = 31$) of 170 prescribed activities were reported not in use. Reasons were as follows: insufficient time to implement activity, caregiver perception that the activity was too demanding, or low caregiver confidence.

An average of \$70 per dyad was expended (range = \$0–\$129) for activity-related materials (e.g., game boards, crafts, organizing bins).

Acceptability and Perceived Benefit

Of the 60 individuals with dementia, therapists perceived that the vast majority found the TAP sessions acceptable, as attested to by eight indicators

(Table 4). Specifically, therapists reported that close to 95% wanted to participate in sessions, 91% demonstrated interest, 67% demonstrated pleasure very much, and 32% demonstrated pleasure somewhat. Only 3.5% appeared bored or uninterested, 5.3% refused participation, and 2.0% appeared agitated or upset in a session.

Regarding caregiver acceptability, close to 96% indicated that sessions were somewhat or very useful, with other indicators also showing high levels of acceptability (Table 4).

As to perceived benefits, therapists reported that 100% of dementia patients engaged in activity with them somewhat or very much, with only 2% (less than two persons) rejecting therapist suggestions and 4% wishing to stop a session. As to caregivers, close to 86% expressed somewhat or very much lower upset with challenging behaviors, 95% expressed feeling more in control somewhat or very much, and 96% accepted occupational therapist suggestions somewhat to very much. Therapists reported that only 7% did not demonstrate enhanced skills (e.g., communication or simplifying activities), and 4% reported not using intervention strategies (Table 4).

Discussion

The Tailored Activity Program offers specially designed activities that are customized to an

Table 4. Acceptability of Tailored Activity Program to Dyad ($n = 57$)

	Not at all %	Somewhat %	Very much %
Caregiver acceptability			
Make you welcome	0	7.0	93
Appear bored or uninterested ^a	94.7	1.8	3.5
Ask questions, curious	3.5	33.3	63.2
Disclose information	3.5	12.3	84.2
Resist participation ^a	77.2	12.3	10.5
Indicate treatment was useful	3.5	17.5	78.9
Share own knowledge	3.5	21.1	75.4
Offer feedback	1.8	17.5	80.7
Express need for more info	5.3	59.6	35.1
Indicate no effect or matters worse ^a	87.7	10.5	1.8
Total (Cronbach's alpha = .76)			
Caregiver perceived benefit			
Feels less upset with CR behavior	14.0	57.9	28.1
Accept suggestion	3.5	17.5	78.9
Demonstrate understanding	5.3	12.3	82.5
Express feeling of control	5.3	24.6	70.2
Modify strategies to fit CR needs	7.0	28.1	64.9
Report using strategies	3.5	19.3	77.2
Demonstrate communication	7.0	26.3	66.7
Demonstrate simplification approach	7.0	26.3	66.7
Total (Cronbach's alpha = .93)			
Dementia patient acceptability			
Want to be part of sessions	5.3	45.6	49.1
Ask question/curious	56.1	31.6	12.3
Show signs of interest	8.8	57.9	33.3
Not want to stop	52.6	29.8	17.5
Appear bored or uninterested ^a	64.9	31.6	3.5
Resist attempt to participate ^a	68.4	26.3	5.3
Appear agitated ^a	84.2	14.0	1.8
Appear upset ^a	89.5	8.8	1.8
Total (Cronbach's alpha = .81)			
Dementia patient perceived benefit			
Engage in activity	0	26.3	73.7
Express/show pleasure	1.8	31.6	66.7
Reject suggestions ^a	70.2	28.1	1.8
Convey wanted to stop ^a	59.6	36.8	3.5
Total (Cronbach's alpha = .73)			

Note: CR = care recipient.

^aReverse-coded item in computation of Cronbach's alpha.

individual's physical, sensorimotor, and cognitive abilities, thus motivating and enabling activity engagement. Specifically, the intervention taps into spared or residual abilities and provides an environment supportive of these abilities. The TAP approach does not emphasize new learning, unlike other activity interventions, although it may entail some procedural learning if appropriate. Instead, therapists select activities that build on preserved capabilities identified from the assessment process and do not tax areas of cognition that are most impaired (e.g., memory). In designing activities, therapists simplify the activity and structure it to focus on single rather than multiple or complex tasks, thereby

minimizing errors. The environment is set up to provide visual, auditory, or tactile cues to facilitate recall and guide initiation and sequencing. By grading activities to match capabilities, TAP minimizes external demands that may heighten stress in an individual with dementia. For example, high-functioning individuals are introduced to goal-directed and multi-step activities to achieve a just right challenge; lower-functioning individuals are introduced to activities based on repetitive motion (e.g., washing windows, folding towels) and that integrate multisensory stimulation (e.g., soft music, objects pleasant to touch).

The data presented here suggest that TAP is feasible to implement, as evidenced by the ease of

administration of assessments and acceptability of both the assessment and treatment sessions to caregivers and individuals with dementia. The Tailored Activity Program was also highly acceptable and beneficial to caregivers and individuals with dementia, as observed by interventionists and reported by caregivers.

The assessment process itself served as a meaningful intervention, enhancing families' understandings of specific abilities and deficits (e.g., person can manipulate objects handed to him or her but cannot follow multistep verbal directions) within the context of home functioning, and the potential activities that would engage their relatives. Also, most individuals with dementia asked to keep the placemat they had made during the evaluation. Only one dementia patient (male) refused to participate in the craft assessment, viewing it as too low level and of no intrinsic interest. The fact that close to 82% of prescribed activities were used by families supports the validity of the assessment approach in identifying appropriate activities.

The TAP assessment addresses the full range of cognitive functioning, including meaning-making abilities of impaired individuals as well as caregiver management abilities and characteristics of the home environment supportive of daily functioning. This is in contrast to traditional neuropsychological examinations that focus on deficit areas and that do not identify strengths, nor include the role of family caregivers and home environments in evaluating potential capacity (Sabat, 2005).

Essential to TAP is tailoring activities to individual capacity. Although tailoring requires therapist time, it is critical to the success of the intervention. This is consistent with other research showing that tailoring produces better outcomes in behavioral interventions (Richards, Enderlin, Beck, McSweeney, Jones, & Robertson 2007).

Replication Considerations

Although TAP was tested using clinical trial methodology, additional evaluation with larger numbers and more diverse families is required to substantiate its efficacy, staying power, and cost-effectiveness. It is unknown, for example, whether caregivers continue to use activities at the completion of the study and, if so, for how long. Also, in the original trial, TAP targeted individuals at the moderate to severe disease stages. However, TAP may also be relevant to individuals at earlier dis-

ease stages who experience frustrations with daily routines and are beginning to disengage from valued activities.

A limitation is this study's reliance on direct observations by interventionists and their perceptions of the acceptability and perceived benefits of caregivers and individuals with dementia. Although high internal consistency as measured by Cronbach's alpha was obtained for indexes of acceptability and benefit, interventionist reports are potentially biased; future research should evaluate family acceptability and benefit using independent raters.

Despite the need for further testing, the outcomes to date suggest that TAP merits consideration as a nonpharmacological approach to manage behavioral symptoms. Importantly, TAP poses no known risks. To translate TAP into real practice settings, there are three primary challenges. First, TAP requires delivery by occupational therapists who must be trained in the program. By virtue of their professional education, occupational therapists have the requisite knowledge and skills to implement TAP (e.g., understanding person-environment fit models, activity analysis, Allen cognitive assessments, relationship of cognitive functioning to daily life activities). However, TAP represents a specialized practice for which we estimate that up to 2 training days are required to learn assessments, how to customize activities, and, most importantly, how to collaborate with and teach activities to caregivers and individuals with dementia. Given the clinical reasoning and skill level required, TAP may be most suitable for delivery by occupational therapists with prior home or dementia care experience. Reliance on occupational therapists to deliver TAP may pose a challenge for some practice settings due to cost considerations and workforce shortages, particularly in regions with limited access to therapists. Future research is necessary to determine whether costs can be reduced by having other professionals such as care managers or activity therapists implement the activity prescriptions once they are derived by TAP-trained occupational therapists who conduct the assessments.

A second challenge concerns referral and payment mechanisms. The U.S. health care system lacks an adequate infrastructure to support referrals and payment for nonpharmacological approaches to dementia care (Bodenheimer, 2008; Mongan, Gerris, & Lee, 2008). However, within current systems, TAP may be reimbursable under Medicare Part B with a physician's prescription when there is a concern for home safety, functional

decline, or behavioral manifestations that interfere with daily functioning. The Tailored Activity Program evaluates cognitive functional levels, and as we have reported elsewhere, outcomes of TAP included behavioral symptom reduction and caregiver skill enhancement, in keeping with guidelines of the Centers for Medicare and Medicaid Services for this funding mechanism.

A third replication challenge is the time required to develop activity prescriptions. Therapists must review assessment outcomes and, using lay language, carefully construct a concise summation of test results and guidelines for introducing and using activities. Although there is a TAP activity prescription template, each prescription is individualized to reflect the specific constellation of factors relevant to individuals with dementia, caregivers, and home environments. Although tailoring is critical to program success, it is labor intensive and thus potentially costly, posing a particular challenge in today's health care environment.

Nevertheless, we believe the benefits of TAP outweigh these concerns. The average cost of TAP was \$941.63 per dyad. Moreover, TAP was highly cost effective, saving caregivers 1 extra hour a day in caregiving at a cost of only \$2.37 a day (Gitlin, Hodgson, & Pizzi, 2009).

In conclusion, TAP offers clinicians a promising nonpharmacological approach that appeals to and benefits individuals with dementia and their caregivers. Although caregivers have many needs including disease education, respite, and social support, TAP represents an intervention that resonates with one of the most profound concerns of families, that of meaningfully engaging individuals with dementia, preserving their quality of life, and managing challenging behaviors. Referral to a TAP-trained occupational therapist may offer families a better understanding of their relative's cognitive capacity and enable them to implement and use activities at home to more effectively manage challenging behavioral symptoms and preserve life quality.

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